UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,337	02/07/2002	Naoki Kimura	Q67362	4604

23373 7590 04/01/2005

SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER	
PAK, SUNG H	

ART UNIT	PAPER NUMBER
2874	

DATE MAILED: 04/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/067,337	KIMURA, NAOKI	
	Examiner	Art Unit	
	Sung H. Pak	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 January 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7-28 and 31-50* is/are rejected.

7)☒ Claim(s) *5,6,29 and 30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *0704*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Applicant's amendment filed 1/12/2005 has been entered. All pending claims have been carefully reconsidered in view of the amendment and accompanying arguments. However, the claims remain unpatentable, and the previous ground of rejection is modified to address the amended limitations. Please refer to Response to Amendment for details.

Information Disclosure Statement

Information disclosure statement filed 7/02/2004 had been considered by the examiner in the previous office action. Regrettably, an incorrect copy of the PTO-1449 (a copy that did not contain initials) was inadvertently sent out with the previous office action. Properly initialed PTO-1449 is being sent out with the current office action.

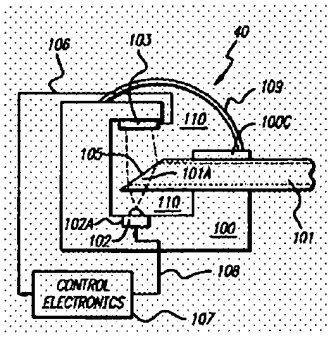
Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 7-10, 26-28, 31-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou (US 6,081,638) in view of DiDomenico, Jr. et al (US 4,165,496) as discussed in the previous office action.

Zhou and DiDomenico, Jr. et al were cited in previous office actions.



Zhou discloses an optical device with all the limitations set forth in the claims, except it does not explicitly teach light monitoring means provided on the clad layer of light transmitting means, which receives the light through the clad layer.

Specifically, Zhou discloses: light emitting means for emitting signal light ('102'- figure above); optical transmitting means for transmitting said signal light surrounded by a clad layer ('101', column 4 lines 44-56); light monitoring means for receiving forward light directly (i.e. not reflected, directly emitted from the light emitting means- figure above); support means for supporting said light emitting means and said optical transmitting means ('100' figure above); wherein said light monitoring means is provided on the opposite side from the supporting means (figure above); wherein said forward light is a portion of leakage light that is not coupled to the optical transmitting means (column 6 lines 66-67); wherein said optical transmitting means is an optical waveguide; wherein said optical waveguide is an optical fiber (column 4 lines 44-56); positioning means for positioning the optical fiber so that signal light emitted from the light emitting means can be optically coupled to the optical fiber ('100, 100c' figure above- column 4 lines 22-42); positioning grooves that position optical fiber in the substrate (column 4 lines 38-42); wherein said light monitoring means is disposed so that it cannot contact the optical fiber

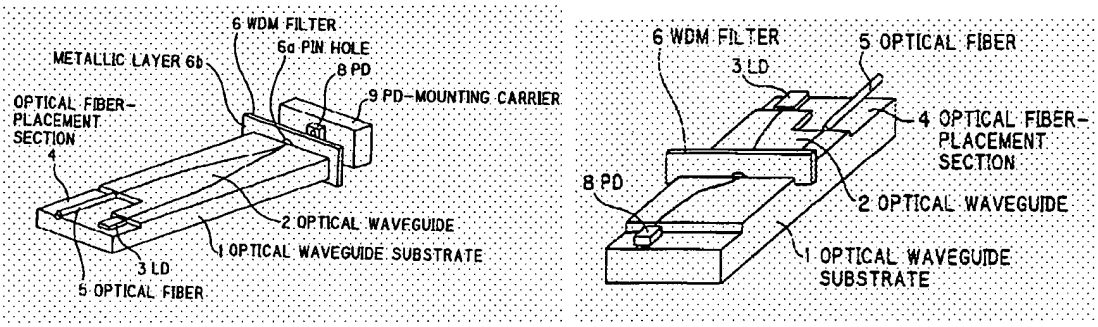
(figure above); wherein a current generated by the light monitoring means is used to control the signal light output from the light emitting means (figure above- column 6 lines 24-34).

However, DiDomenico explicitly teaches the light monitoring means provided on the clad layer of the optical waveguide, which receives the light through the clad layer (Fig. 5 of DiDomenico Jr. et al.). Disposing light monitoring means on the clad layer of the optical waveguide would be considered advantageous and desirable to one of ordinary skill in the art because it would allow greater portion of the light emitted by the light emitting device to be coupled into the monitoring means, and thus allows more accurate monitoring of the emitted light. In addition, disposing light monitoring means on the clad layer reduces the distance in which the emitted light has to travel before it is detected by the monitoring means. This would also improve the accuracy of light monitoring because the light would be less prone to deleterious effects, such as scattering when traveling outside the cladding.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the Zhou device to have light monitoring means provided on the clad layer of the waveguide.

Claims 11-25, 38-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukutomi (US 2001/0033716A1) and Zhou (US 6,081,638), and further in view of DiDomenico, Jr. et al (US 4,165,496).

Fukutomi was cited in previous office actions.



Fukutomi discloses an optical device with all the limitations set forth in the claims, except it does not teach light monitoring means for receiving forward light directly from light emitting means through the clad layer.

Specifically, Fukutomi discloses: light emitting means for emitting signal light ('3' left figure); first guiding means for guiding said signal light ('2' left figure); light monitoring means for receiving light emitted from the light emitting means (paragraph 0058); second guiding means for guiding signal light input to the optical semiconductor module (left figure, paragraph 0046); coupling means for coupling light guided through the first guiding means and light guided through the second guiding means (left figure); support means for supporting the light emitting means (left figure); light receiving means fore receiving signal light guided by the second guiding means ('8' left figure); wherein the light receiving means is provided on the support means (left figure); wherein the first guiding means is a first waveguide and the second guiding means is a second waveguide (left figure); filtering means for allowing transmission of predetermined signal light ('6' right figure); third guiding means for guiding signal light allowed transmission by the filtering means (right figure); light receiving means for receiving signal light guided through the third guiding means (right figure); wherein the filtering means reflects the first signal light and allows transmission of second signal light (right figure, paragraph 0048);

wherein the first, second and third guiding means are first, second, and third optical waveguides (right figure).

On the other hand, Zhou explicitly teaches light monitoring element that receives forward light directly (not reflected) from a light emitting element, wherein the light monitor is provided on the opposite side from the substrate, wherein a current is generated by the light monitor so as to control the signal light output from the light emitting element (Figure 4, see discussion above). Zhou teaches that such an arrangement is advantageous and desirable over the prior art because it allows for efficient coupling of light while providing accurate measure of emitted light intensity (column 2 lines 47-55).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the Fukutomi device to have a light monitor that receives forward light as taught in Zhou.

In addition, DiDomenico explicitly teaches the light monitoring means provided on the clad layer of the optical waveguide, which receives the light through the clad layer (Fig. 5 of DiDomenico Jr. et al.). Disposing light monitoring means on the clad layer of the optical waveguide would be considered advantageous and desirable to one of ordinary skill in the art because it would allow greater portion of the light emitted by the light emitting device to be coupled into the monitoring means, and thus allows more accurate monitoring of the emitted light. In addition, disposing light monitoring means on the clad layer reduces the distance in which the emitted light has to travel before it is detected by the monitoring means. This would

also improve the accuracy of light monitoring because the light would be less prone to deleterious effects, such as scattering when traveling outside the cladding.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the Fukutomi device in view of Zhou and DiDomenico devices to have light monitoring means provided on the clad layer of the waveguide.

Allowable Subject Matter

Claims 5-6, 29-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The reasons for the indication of allowable subject matter were discussed in the previous office action.

Response to Amendment

Overview:

Claims 1-50 are pending. By this amendment, claims 1, 11, 18, 26, 38, and 44 are amended to recite light monitoring means for receiving light "through said clad layer" (see claims 1, 11, 18, 26, 38, 44).

The previous ground of rejection for claims 1-4, 7-10, 26-28, 31-37 remains unchanged and it has been maintained in this office action because all the recited limitations are obvious over Zhou (US 6,081,638) in view of DiDomenico, Jr. et al (US 4,165,496), despite the added limitations (see discussion in Claim Rejections- 35 USC 103, and see the discussion below).

The previous ground of rejection for claims 11-25, 38-50 has been changed in this office action, in order to address the newly added limitation. These claims are now rejected over Fukutomi (US 2001/0033716A1) and Zhou (US 6,081,638), (as applied in the previous office action) and further in view of DiDomenico, Jr. et al (US 4,165,496) (to address the new limitation).

Since the new ground of rejection is necessitated by the amendment, the office action is made final.

Arguments:

Starting on page 13 of the applicant's response, it is argued that none of the cited references disclose "a light monitoring means for receiving forward light through said clad layer directly" (page 14, 3rd full paragraph). Specifically, it is argued that Zhou reference "fails to teach or suggest light monitoring means for receiving forward light *through a clad*" (emphasis added; page 14, lines 1-2); DiDomenico reference "does not disclose light monitoring means for receiving *forward* light through a clad layer directly" (emphasis added; page 14, 1st full paragraph); and Fukutomi reference "fails to disclose light monitoring means for receiving forward light directly from emitting means" (page 14, 2nd full paragraph).

The examiner respectfully submits that each of the cited references ***taken alone*** may not disclose all the recited limitations of the instant application. However, when considered ***in combination*** as discussed in the previous office action and the present office action, the recited limitations are rendered ***obvious***. It is noted that the claims are rejected based on 35 USC 103 as

being obvious to one of ordinary skill in the art, NOT based on 35 USC 102 as being anticipated by a particular prior art.

Claims 1-4, 7-10, 26-28, 31-37:

As discussed in the previous office action, and maintained in this office action, Zhou discloses all the limitations set forth in the claims including "light monitoring means for receiving *forward light directly*", except it does not explicitly teach the light monitoring means positioned *on the clad layer* which would *allow* the light monitoring means to receive forward light *through the clad layer*. However, DiDomenico explicitly teaches light monitoring means to be positioned on the clad layer, and allow the monitoring means to receive the light through the clad layer (see Claim Rejection- 35 USC 103). It is irrelevant that Zhou or DiDomenico ***taken alone*** does not teach all the limitations of the present claims, since when considered ***in combination***, Zhou in view of DiDomenico renders all the recited limitations ***obvious*** to one of ordinary skill in the art as discussed.

As discussed in the previous office action and maintained in this office action, the motivation for making such modification is readily available to one of ordinary skill in the art. It is further noted although applicant merely asserts that one of ordinary skill would not be motivated to combine the references (page 14, 3rd full paragraph), the substantive merits of the motivation to combine the references had not been challenged. Therefore, the examiner respectfully submits that the rejection of claims 1-4, 7-10, 26-28, 31-37 based on 35 USC 103 is proper.

Claims 11-25, 38-50:

Analogously, even if any one reference, ***taken alone***, fails to teach all the limitations set forth in these claims, the recited limitations are rendered ***obvious*** over Fukutomi (US 2001/0033716A1) and Zhou (US 6,081,638), and further in view of DiDomenico, Jr. et al (US 4,165,496) as discussed above.

As discussed in the previous office action, and the present office action Fukutomi teaches all the limitations set forth in the claims except light monitoring means receiving forward light directly through the clad layer. However, Zhou explicitly teaches a light monitoring means for receiving forward light directly, and DiDomenico explicitly teaches a light monitoring means for receiving light through the clad layer. Therefore, the claimed limitations are obvious over Fukutomi in view of Zhou and in further view of DiDomenico as discussed in this office action.

Since there is a clear motivation to combine the references as discussed above, which is not contested by the applicant, the claim rejection based on 35 USC 103 is proper.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (571) 272-2353. The examiner can normally be reached on Monday- Friday, 9AM-5PM.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sung H. Pak
Examiner
Art Unit 2874

sp